

BELIEFS AND PRACTICES OF ACTIVE DUTY AIR FORCE MALES RELATED TO  
TESTICULAR CANCER AND TESTICULAR SELF-EXAMINATION

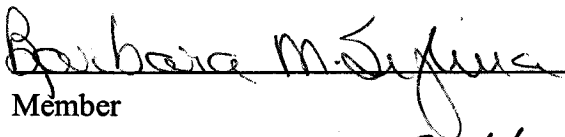
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## ABSTRACT

Testicular cancer is the most common neoplasm found in men between the ages of 15 and 35, with an incidence that has nearly doubled over the last 20 years. Previous studies in the United States and Europe suggests that there is a limited awareness of testicular cancer and an even more limited practice of testicular self-examination. The purpose of this research was to investigate the beliefs and practices of active duty Air Force males related to testicular cancer and testicular self-examination. This study used a descriptive design to examine concepts from the health belief model and social cognitive theory that have been predictive of self-care and prevention behaviors. A nonrandom convenience sample of 100 men was taken from the active duty Air Force population assigned to a large Air Force facility in the eastern section of the United States. Data were collected using a Questionnaire adapted from Champion's tool measuring variables related to breast self-examination. The findings of this study revealed that an overwhelming number of men had never practiced testicular self-examination. The vast majority of participants also indicated that no specific barriers existed to impede its practice.

Key Words: **Testicular self-examination**, **active duty**, **military**, **health beliefs**

BELIEFS AND PRACTICES OF ACTIVE DUTY AIR FORCE MALES RELATED TO  
TESTICULAR CANCER AND TESTICULAR SELF-EXAMINATION

by

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## PREFACE

This research was conducted to provide information about active duty Air Force males beliefs and practices related to testicular cancer and testicular self-examination. It was designed to provide information for a military population on a subject in which there is very little published research and to embark on the creation of a knowledge base.

## DEDICATION

To my parents, Bob and Joan Barnes, I dedicate the completion of this thesis. Their unwavering support and tireless encouragement throughout my childhood and adult life have given me the strength and determination to persevere in the face of overwhelming challenges.

To my peers and instructors I dedicate this research. Their endless support and encouragement to me as an officer, student, and friend was ever apparent during my graduate studies. I extend a special thank you to Kathleen M. Herberger, Maj, U.S.A., who will always remain a valued friend and colleague. I am proud and consider myself to have been blessed to have been in the company of such fine individuals. I offer my eternal thanks to you all.



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## CHAPTER I: INTRODUCTION

The incidence of testicular cancer (TC) in the United States is on the rise. TC is the most common form of cancer among males between the ages of 15 and 35 (Singer, Tichler, Orvieto, Finestone, and Moscovitz, 1993). Data indicates that the incidence of TC has increased over the past 20 years. It has been estimated that 1 in 500 white males will develop testicular cancer (United Kingdom Testicular Cancer Study Group, 1994). In 1991, 6100 new cases were reported with 375 deaths. In 1994, 6,880 new cases were diagnosed, with 325 deaths (American Cancer Society, 1994). Currently, there is no preventive medicine mandate dictating routine screening of asymptomatic men for testicular cancer by provider examination or patient self-examination. Screening does not affect the incidence of cancer, but early detection through screening can affect the morbidity and the potential mortality of the disease. The American Cancer Society recommends that testicular examination should be performed by a healthcare provider every three years (U.S. Department of Health and Human Services, 1998). This study attempted to examine beliefs and practices related to testicular cancer and testicular self-examination.

Unlike breast self-examination for women, limited if any attention has been paid to the importance of men performing testicular self-examination. The importance of breast self-examination for women has been emphasized by the health care community and has received a great deal of attention in the media. The American Cancer Society currently recommends that a woman have her breasts examined by a health care provider every year and examine her own breasts once a month. It is currently recommended that a health care provider examine a man's testicles every three years. As reported by the

U.S. Department of Health and Human Services (1998), there is currently no provision for the performance of TSE.

Evidence suggests there is a significant correlation between delay in presentation to a health care provider and clinical stage of the disease. Early diagnosis of TC is associated with less toxic and invasive treatment (Wilson, 1994). This study has significant implications for the military. The vast majority of active duty males are in the age range in which TC most often occurs. Early detection and treatment would likely result in reduced morbidity and mortality due to TC. Another benefit of early diagnosis is less complex and costly treatment regimens. The end result would be a more rapid return to duty in order to maintain a mission ready stance.

#### Purpose

The purpose of this descriptive study was (a) to examine the beliefs of active duty Air Force males related to testicular cancer and testicular self-examination, (b) to determine if men were instructed in testicular self-examination (TSE), would they perform it, and (c) to determine if any perceived barriers to performance of TSE exist. A descriptive research design using a survey methodology was used to answer the research questions. The population studied included men permanently assigned to a large military installation located in the eastern section of the United States.

#### Research Questions

The following research questions were examined.

1. Are active duty Air Force males practicing TSE?
2. Is there a relationship between age, race or rank and the practice of TSE?

3. To what extent do active duty Air Force males believe themselves to be susceptible to developing TC?
4. To what extent do active duty Air Force males believe TC to be a serious illness?
5. To what extent do active duty Air Force males believe the practice of TSE to be beneficial?
6. To what extent do active duty Air Force males perceive barriers to the practice of TSE?
7. To what extent do active duty Air Force males believe themselves to be confident in the practice of TSE?

### Conceptual Framework

The Health Belief Model (HBM) was utilized in the exploration of this issue as the focus of the model and this study was on preventive health care behaviors. The HBM suggests that health seeking and prevention behaviors are influenced by a person's perception of a threat posed by a health problem and the value associated with actions aimed at reducing the threat (Polit and Hungler, 1997). The HBM was first developed by a group of social psychologists employed by the U.S. Public Health Service in the early 1950s. The original HBM was comprised of these four concepts: perceived vulnerability or susceptibility, perceived personal harm caused by the condition (severity or seriousness), positive attributes associated with an action or behavior (benefit) and perceived negative aspects related to an action or behavior (barrier) (Rosenstock, Strecher, & Becker, 1988). Currently, the HBM is made up of six major components. These major components include perceived susceptibility, seriousness, perceived benefits and costs (barriers), motivation, and modifying factors (Polit and Hungler, 1991).



Bandura's social cognitive theory has also been utilized to determine what beliefs or circumstances explain, predict or influence behavior. He held that behavior is determined by a series of expectancies and incentives. Expectancies were viewed as beliefs about how events are connected and beliefs about the consequences of one's actions. Self-efficacy was viewed as the expectancy of one's own competence to execute the behavior needed to influence an outcome (Bandura, 1986). Champion (1992) has included self-efficacy (confidence) in performing health maintenance or prevention behaviors as a component of the HBM in her studies concerning breast cancer screening behaviors.

Perceived susceptibility addresses a person's belief as to whether a health problem is personally relevant. It must be recognized that even if a person admits to personal susceptibility, a behavior will not be enacted unless he believes that an illness would have serious consequences of either an organic or social nature. Seriousness is felt to be the degree of emotional arousal created by the thought of a particular disease as well as the difficulties the health condition will create for the individual. Perceived benefit depends on a person's belief that a given treatment or behavior will cure illness or prevent it. Benefits are considered to be positive aspects associated with a health action (Rosenstock, 1988). Barriers are considered to be negative aspects of a health action. An individual may believe that a particular health action will assist in reducing the threat of disease, but may also see that action as inconvenient, costly, unpleasant, painful or embarrassing (Rosenstock, 1974). Motivation refers to the desire to cooperate with a given treatment, a belief that an individual should comply with what is prescribed and

engage in positive health behaviors. Modifying factors include patient-provider relationships and demographic factors (Polit and Hungler, 1991).

### Operational Definitions

For the purpose of this study, the following variables, key words and, phrases are defined.

1. Active duty Air Force: Air Force officers and enlisted individuals who's full time occupation is to provide support to "air forces necessary for the effective prosecution of war and military operations short of war, except as otherwise assigned" (Napier, 1992, p. 327)
2. Testicular Cancer: "A malignant tumor or neoplasm" (Thomas, 1982, p. C-9) of the testes.
3. Testicular Self-examination: The process by which a male inspects and palpates his testicles for any unusual lumps or hardened areas (Jarvis, 1996).
4. Susceptibility: Theoretically, susceptibility is defined as one's subjective perception of the risk of contracting a condition (Janz and Becker, 1984).  
Operationally, it was defined in items six through 10 on the Health Belief Model Scale for Measuring Beliefs Related to Testicular Cancer.
5. Seriousness: Theoretically, seriousness is defined as the feelings concerning the seriousness of contracting an illness or leaving it untreated, including the medical and possible social consequences (Janz and Becker, 1984). Operationally, it was defined in items 11 through 17 on the Health Belief Model Scale for Measuring Beliefs Related to Testicular Cancer.

6. Barriers: Theoretically, barriers are defined as the perceived negative aspects related to an action or behavior (Rosenstock, et al. 1988). Operationally, barriers were defined as items 22 through 27 on the Health Belief Model Scale for Measuring Beliefs Related to Testicular Cancer.
7. Confidence: Theoretically, confidence is defined as the perceived procedural competence of performing a health care behavior, (Champion, 1993). Operationally, confidence was defined as items 28 through 33 on the Health Belief Model Scale for Measuring Beliefs Related to Testicular Cancer.

#### Limitations

Limitations to this study have been identified. Data collection was limited to one military installation located in the eastern section of the United States. Generalization of findings to other military services may be limited. Some participants may feel obligated to indicate that they engage in health care behaviors, even when they do not, resulting in inaccurate data.

#### Assumptions

The assumptions made in the performance of the study were that participants would respond honestly to the questionnaire and that most health care professionals consider TSE to be a valid health care practice.

## CHAPTER TWO: REVIEW OF LITERATURE

Testicular cancer (TC) is identified as the most common cancer found in men between the ages of 15 and 35 (Sonpavde and Einhorn, 1999). The peak incidence of TC occurs in white men between the ages of 30 and 35 (McKiernan, Goluboff, Liberson, Golden, and Fisch, 1999). Though it not a common disease, it's incidence has seen a 45% increase over the last 20 years ("Cancer Statistics," 1996). Behavioral models have been utilized to describe attitudes and perceptions of individuals in regard to health maintenance and cancer screening behaviors. In the following review of literature, testicular cancer (TC) incidence, morbidity and mortality are discussed. Studies describing health maintenance and preventive behaviors, attitudes, and perceived barriers are also addressed.

In 1995, an estimated 7,100 new cases of TC were diagnosed in the United States and 370 deaths occurred (Wingo, Tong, and Golden, 1995). The annual peak incidence range for men between the ages of 20 and 35 is 8 to 14/100,000 (Ries, Miller, and Hankey, 1994). Thompson, Optenberg, Byers, and Dove (1996) studied the incidence of TC in active duty males in the Department of Defense (DOD). Their research indicated that the rate of TC increased from 8.62/100,000 in 1988 to 15.38/100,000 in 1996. It is remarkable in that the actual number of active duty males within the DOD has decreased by 639,348 during the same period of time. The findings indicate a 78% increase in the incidence of TC over a period of 9 years. Increased incidence of TC was found among United States Navy men working directly with aircraft (Garland, Gorham, Garland, and Ducatman, 1988). This phenomenon was thought to be due to exposure to lubricating oils, degreasing agents and various solvents. Among Royal Air Force males, individuals

working closely with aircraft had a higher incidence of TC than those men who did not work directly with aircraft (Foley, Middleton, Stitson, and Mahoney, 1995).

A study conducted within the Israeli army revealed that of 717 soldiers, 21 % had knowledge of TSE, 16 % actually received instruction and two percent practiced it regularly. Seventy percent of the physicians indicated that they themselves had been taught how to examine testicles, yet only 10 % of them examined testicles during routine physicals (Singer, et al. 1993).

Most testicular cancers are of germ-cell origin and are divided into two broad categories: seminoma and nonseminomatous tumors. Seminomas are the most common and represent up to 50% of all testicular tumors. Nonseminomatous tumors are often composed of several histologic types (Epperson and Frank, 1998). To assist in the diagnosis of TC, scrotal ultrasound is used to identify the presence of a testicular mass. Serum tumor markers of alpha-fetoprotein (AFP) and human chorionic gonadotropin (HCG) are the most frequently drawn serum determinants if ultrasound is positive for a testicular mass (Sternberg, 1998). Orchiectomy (surgical removal of the testes) is always the initial standard of care. Serum tumor markers are evaluated for 3 to 4 weeks after orchiectomy. In Stage I of TC, serum tumor markers should normalize within the 3 to 4 weeks.

In early Stage I seminoma (disease that is confined to the testes) cure is most often obtained from a combination of orchiectomy and radiation therapy. Early stage nonseminomatous cancer requires orchiectomy and usually the removal of retroperitoneal lymph nodes (Epperson and Frank, 1998). In the presence of metastatic disease (Stages II and III) chemotherapy is the standard treatment (Bokemeyer, 1998). It appears

obvious that detecting TC in its early non-metastatic stages can result in less toxic treatment, thereby decreasing its morbidity and potential mortality. Survival rates among men diagnosed with TC now exceed 90 % overall and the five year survival rate is estimated to be 95% (Kinkade, 1999).

Numerous articles have been published regarding the value of TSE. Turner (1995) supports the practice of TSE. It has been stressed that the ease of teaching and learning TSE in combination with the known excellent cure rate of the disease allows for its education to be performed with a very positive approach (Thornhill, 1986). Some research has advocated teaching TSE in the schools (Whol, 1998). This study suggested that teachers are influential in establishing positive health behavior in young men. Opposition to the performance of TSE currently exists. In contrast, Morris (1996) asserts that the low incidence of TC accompanied by the potential high cost of screening and anxiety induced in men if they find lumps may not make TSE worthwhile. The low mortality related to TC is a reason for being noncommittal over the value of TSE as a method of screening.

The Health Belief Model (Rosenstock, 1974) has frequently been used to assess the attitudes women have related to breast cancer (BC) and breast self-examination (BSE). Factors relating to frequent practice of BSE were high perceived benefits, low perceived barriers and high self-concept ( Hallal, 1982; Rutledge, 1987). In a study of over 200 women, Massey (1986) determined that a significant relationship existed between the practice of BSE and perceived susceptibility. An additional finding indicated that age, education and race were significantly related to perceived susceptibility. Champion (1992) in the process of refining her own HBM instrument for

breast cancer screening behaviors found there was a positive relationship between the individuals perceived susceptibility to the disease and the performance of BSE. This same study also revealed that women who believed there were benefits to health care behaviors were more likely to engage in the performance of BSE.

Researchers have identified barriers that may affect the performance of TSE. Ignorance to susceptibility, embarrassment and fear were cited by Katz, Meyer, and Walls (1995) in their study of cancer awareness and self-examination practices in young men and women. A large scale study performed in Europe regarding the attitudes of university students toward and practices of TSE concluded that the low level of importance assigned to it and its practice indicated that these young men were unaware of the value of this simple method of early cancer detection (Wardle, Steptoe, Phil, Burckhardt, Vogel, Vita, and Zarczynski, 1994).

In summary, the literature concludes that there is an increased incidence of TC and there exists a knowledge deficit regarding awareness of testicular cancer and self-examination practices and that several factors influence an individual's health maintenance behaviors. Not only is education of the public important but also the importance assigned to this practice by health care providers. Studies are needed to determine if men are being educated about TC, the performance of TSE and their beliefs about the disease and subsequent health maintenance practices.

## CHAPTER THREE: METHODOLOGY

### Introduction

The purpose of this study was to explore the beliefs held by active duty Air Force males relating to testicular cancer and testicular self-examination. This chapter describes the research design, sample, and setting, measurement methods, and protection of human rights.

### Research Design

A descriptive design was used, applying a survey methodology. Surveys are usually conducted by way of interview or questionnaire. Using a questionnaire as a survey method has multiple benefits. Questionnaires can be designed to determine beliefs, attitudes, opinions, or levels of knowledge an individual has about a subject (Burns and Grove, 1997), providing less opportunity for bias than with the interview method. A questionnaire was distributed to men who were permanently assigned to a large military installation located in the eastern section of the United States. There was no treatment applied and an expected outcome was not identified.

Descriptive research is utilized to discover new meaning and describe what already exists. It offers an investigator a means of determining the frequency with which a phenomenon occurs and method of categorizing information on a particular subject (Burns and Grove, 1997). A questionnaire was utilized to determine the beliefs and practices of men related to TC and TSE. The aim of this study was to ascertain if active duty Air Force males consider themselves susceptible to TC, if they believe TC to be serious, if they believe there are benefits to practicing TSE, and if they believe there are



barriers to practicing TSE. An additional goal was to determine if there is any relationship between demographics (modifying factors) and the practice of TSE.

### Measurement Methods

A questionnaire utilizing the Health Belief Model Scales for Measuring Beliefs Related to Breast Cancer developed by Champion (1993) was modified to measure the beliefs of active duty Air Force males in relation to testicular cancer and testicular self-examination. These scales were originally assessed for validity by Champion using a panel of three well known experts familiar with both the Health Belief Model and breast cancer screening. The questionnaire utilized declarative statements and scaled responses, offering a method of examining beliefs or attitudes about a particular subject that minimizes investigator bias and simplifies data analysis (Burns and Grove, 1997). All scale questions were measured on a five point Likert scale with the following: 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; and 5 = strongly agree. Demographic information included patient age, ethnicity, and military grade (see Appendix B).

Following modification of the questionnaire, with the approval of Champion (see Appendix D), to focus on TSE, a content validity index for the 33 item questionnaire was calculated using two master's prepared Family Nurse Practitioners who are expert in health promoting behaviors including TSE. Each nurse practitioner reviewed the items in the questionnaire for relevancy to the study. A range of 1-4 was utilized to assign the degree of relevancy of each item. The scale range was as follows: "1" indicated the item was not relevant, "2" indicated the item was somewhat relevant, "3" indicated the item

was relevant, and “4” indicated the item was very relevant. Statistical calculation gave a content validity index of .9 indicating the content of the survey was valid.

A pilot study of five active duty males was performed to determine if the questionnaire was easily read and understood. This also indicated to investigator the amount of time required to complete the questionnaire. The average time taken to complete the questionnaire was approximately eight minutes. All pilot participants indicated that the language used was clear and well understood.

### Sample and Setting

A nonrandom convenience sample of 100 active duty Air Force males was drawn from personnel assigned to a large Air Force facility in the eastern section of the United States.. This installation was selected due to its large population. Criteria for inclusion were as follows:

1. All participants must be active duty Air Force males of enlisted or officer rank.
2. All participants must be 18 years of age or older.

Criteria that precluded participation in the study were as follows:

1. Members of other uniformed services
2. Air Force Reserves personnel
3. General Officers
4. Chief Master Sergeants
5. Men with a personal history of testicular cancer

The 33 item questionnaire was distributed by the researcher in the Physical Exams office at the Air Force facility (see Appendix B). A brief explanation was given to prospective participants to ensure they meet the criteria for participation. The

questionnaires were distributed during the month of December 1999. Completed questionnaires were inserted into an envelope by the participant and placed in a designated box located out of the direct view of the investigator. This was done to give the individual a greater sense of anonymity.

### Protection of Human Rights

A cover letter accompanied each questionnaire identifying the investigator and explaining the content and intended use of data. The cover letter indicated that the individual was under no obligation to participate in the study nor would there be any personal or professional repercussions should he choose not to participate (see Appendix A). To protect personal privacy and assure anonymity, names were not be requested. The questionnaires did not contain any form of coding that would enable the investigator to specifically identify participants. Institutional Review Board approval from the Uniformed Services University of the Health Sciences (USUHS) was sought and obtained prior to initiation of this study (see Appendix E). Approval to conduct the survey was sought and obtained from the Air Force Office of Survey Review, Randolph Air Force Base, Texas prior to beginning the study. Additionally, permission to conduct the survey was obtained from the installation's Institutional Review Board (see Appendix F).

In summary, this chapter provided a description of the study's research design, a sampling method and setting in which the study took place, the measurement method and data collection instrument as well as the procedures for the protection of human rights.

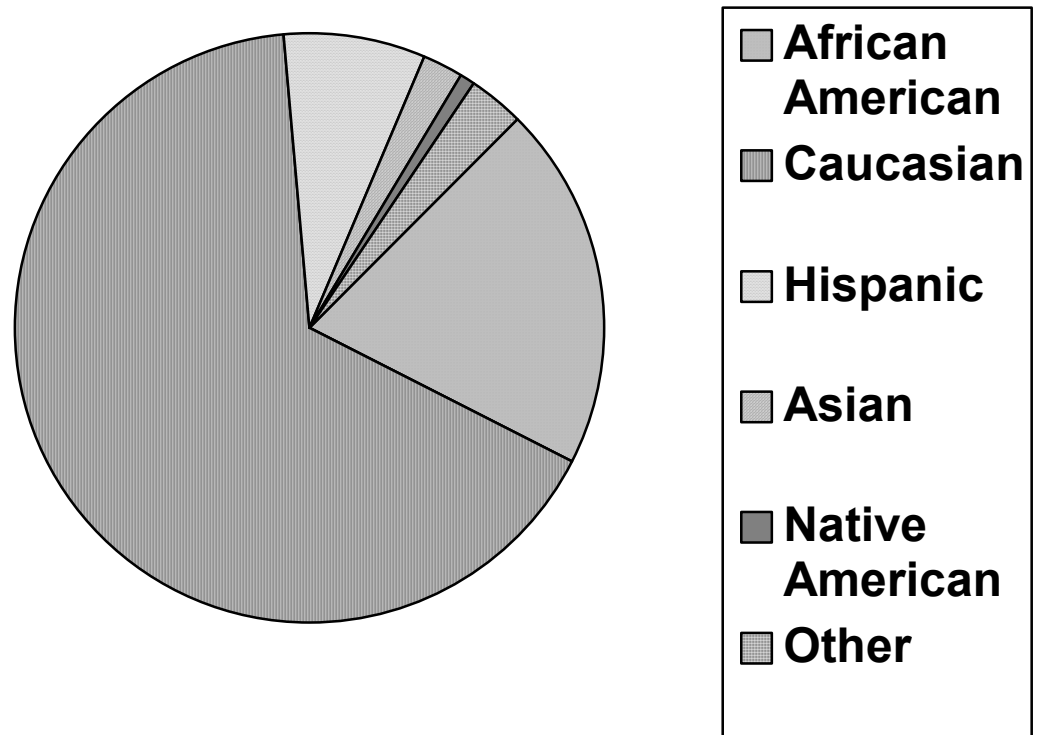
## CHAPTER IV: DATA ANALYSIS

### Introduction

This chapter will address the findings obtained from the data collected. The rate of questionnaire return and demographic data will first be discussed. The research questions will then be presented, along with the statistical analysis of each survey item which will address that particular research question. A grouped statistical analysis was performed on the questionnaire items belonging to each of the five subgroups studied. All Likert scale items were on a range of 15 with “1” being strongly disagree and “5” being strongly agree. SPSS 8.0 for Windows was utilized for data analysis.

### Demographics

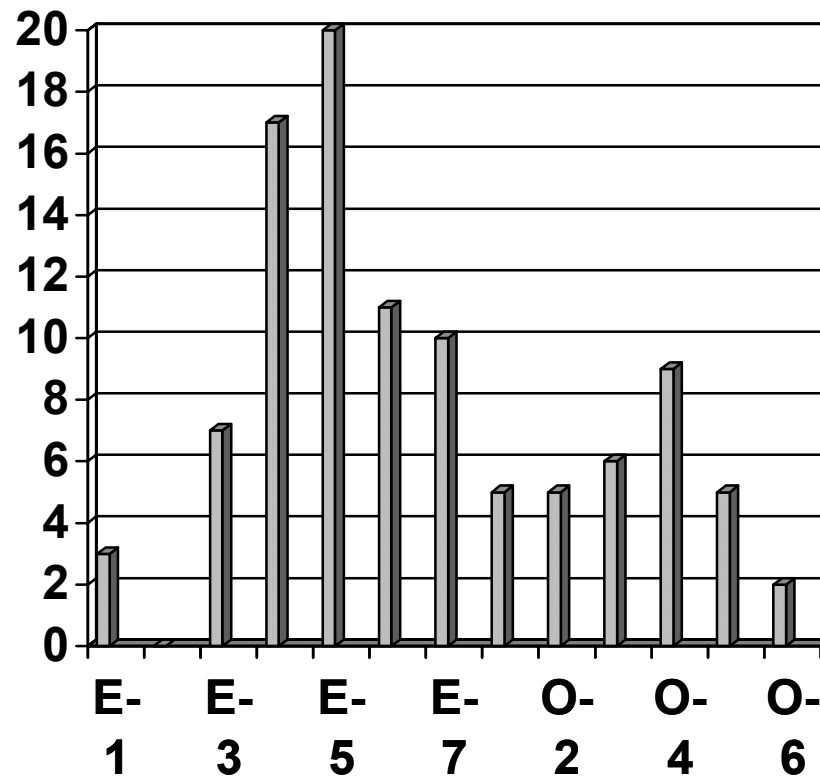
One hundred of one hundred and seven questionnaires were returned to the investigator. This provided an overall return rate of 93%. The age range of the participants was 20-52 with a mean age of 31.83 years and a standard deviation of 7.13 (see Table 1). Twenty percent of the participants identified themselves as African American, two percent were Asian, 67% Caucasian, seven percent Hispanic, and one percent Native American, and three percent identified themselves as belonging to an “Other” ethnic group (see Figure 1). The representative population of 20% African American and 67% Caucasian can be compared with that of the general Air Force ethnic breakdown of these two groups.



**Figure 1.**

**Ethnic breakdown of participants.**

The participants were asked to indicate their military grade. Twenty-six of the participants indicated their grade to be in the enlisted grades of E-1 to E4, 42% were in the enlisted grades of E-5 to E-8. Sixteen percent of the participants indicated their grade to be in the officer grades of O-1 to O-3, and 16% were in the officer grades of O-4 to O-6. The majority of the participants were in the enlisted grades of E-5 to E-7 (see Figure 2).



#### Enlisted Ranks

E-1 = Airman Basic E-2 = Airman E-3 = Airman First Class E-4 = Senior Airman

E-5 = Staff Sergeant E-6 = Technical Sergeant E-7 = Master Sergeant

#### Officer Ranks

O-1 = Second Lieutenant O-2 = First Lieutenant O-3 = Captain O-4 = Major

O-5 = Lieutenant Colonel O-6 = Colonel

**Figure 2.**

**Participant population by rank.**

**Table1.**

**Percentage and Number of Subjects by Age Groups**

Age	<u>n</u>	Percent
20-29 years	100	43
30-39 years	100	42
40-49 years	100	13
50-59 years	100	2

Research Question One

Are active duty Air Force males practicing TSE?

Item Five

Item five inquired as to the frequency which the participant practices testicular self-examination . Participants were asked how frequently they practiced TSE and asked to circle “never”, every (fill in the blank) month(s) or every (fill in the blank ) year(s). Sixty-seven percent of participants indicated that they never practiced TSE, 25% indicated that they practiced TSE every one to six months, and eight percent practiced TSE one time during the year.

Research Question Two

Is there a relationship between age, ethnicity or grade and the practice of TSE?

Items One through Three

Items one, two, and three asked for the participants’ age, ethnicity, and military grade (rank). The age group of 20-29 years had the highest number of responses (42%) of never having practiced TSE. Twenty four percent of the 30-39 year olds indicated they had never performed TSE and 23% of the 30-39 year old never had. All of the

participants in the age group of 50-59 years indicated they performed TSE at least one time a year. Pearson Chi-Square analysis revealed there was no significant difference in age groups with respect to TSE ( $\chi^2=100$ ,  $p=.06$ ). To be statistically significant, Pearson Chi-Square must be less than .05 (Burns and Grove, 1997).

Seventy percent of African American participants responded that they never practiced TSE followed closely by Caucasian participants with 69%. Forty-two percent of Hispanics never practiced TSE. Three percent of the participants who identified with an ethnicity 'other' than those listed in the questionnaire responded that they never practiced TSE and none of the Asian or Native American participants indicated they practiced this health care behavior.

The military grade or rank structure was divided into four groups. No individuals holding military grades of E-2 or E-8 participated in the study. Sixty two percent of enlisted participants holding the grade of E-1 to E-4 and 48% of participants grade E-5 to E-7 never practiced TSE. Sixty two percent of officers holding the military grade of O-1 to O-3 had not practiced TSE and 58% of participants holding the grade of O-4 to O-6 did not perform this practice (see Table 2).



**Table 2.**

**Relationship Between Ethnicity, Age and Frequency of Practice of Testicular Self-Examination among participants (N=100)**

Ethnicity	Age Group	Never	More than once per year	Once per year	Total Participants
African American	20-29 years	7	3	0	10
	30-39 years	7	1	2	10
	40-49 years	0	0	0	0
	50-59 years	0	0	0	0
	Total	14	4	2	20
Asian	20-29 years	1	0	0	1
	30-39 years	0	0	0	0
	40-49 years	1	0	0	1
	50-59 years				
	Total	2	0	0	2
Caucasian	20-29 years	15	9	3	27
	30-39 years	24	3	1	28
	40-49 years	7	2	1	10
	50-59 years	0	1	1	2
	Total	46	14	6	67

Table 2. continued

Ethnicity	Age Group	Never	More than once per year	Once per year	Total participants
Hispanic	20-29 years	0	2	0	2
	30-39 years	1	1	1	3
	40-49 years	2	0	0	2
	50-59 years	0	0	0	0
	Total	3	3	1	7
Native American	20-29 years	1	0	0	1
	30-39 years	0	0	0	0
	40-49 years	0	0	0	0
	50-59 years	0	0	0	0
	Total	1	0	0	1
Other	20-29 years	1	1	0	2
	30-39 years	0	0	1	1
	40-49 years	0	0	0	0
	50-59 years	0	0	0	0
	Total	1	1	0	3

### Research Question Three

To what extent do active duty Air Force males believe themselves to be susceptible to developing TC?

#### Items Six through Ten

Items six through 10 examined participants perception of susceptibility to developing testicular cancer. Participants were asked to indicate to what extent they believed they were susceptible to developing TC by circling “1, Strongly Disagree”, “2, Disagree”, “3, Neutral”, “4, Agree”, or “5, Strongly Agree”. Statistical analysis of the five items in this sub-scale showed that 24% of the participants strongly disagreed that they were susceptible to developing TC in the future, 41% disagreed that they were susceptible to developing TC, and 33% were neutral. Two percent agreed they were susceptible, and less than one percent strongly agreed they were susceptible to developing TC. The sub-scale mean was 2.15 and the standard deviation was .82 (see Tables 3 and 4).

**Table 3.**

**Percent of Responses to Susceptibility Questions (N=100)**

Likert Scale Item	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
It is extremely likely that I will get testicular cancer in the future.	21	39	37	2	1
I feel I will get testicular cancer in the future.	23	41	34	2	0
There is a possibility I will get testicular cancer in the next 10 years.	25	42	30	3	0
My chances of getting testicular cancer is great.	25	41	33	0	1
I am more likely than the average man to get testicular cancer.	24	40	31	5	0

**Table 4.**

**Responses to Susceptibility Questions (N=100)**

Likert Scale Item	Mean	Standard Deviation
It is extremely likely that I will get testicular cancer in the future.	2.23	.84
I feel I will get testicular cancer in the future.	2.15	.80
There is a possibility I will get testicular cancer in the next 10 years.	2.11	.82
My chances of getting testicular cancer is great.	2.11	.82
I am more likely than the average man to get testicular cancer.	2.17	.85

#### Research Question Four

To what extent do active duty Air Force males believe TC to be a serious illness?

##### Items Eleven through Seventeen

Items 11 through 17 inquired as to what feelings of seriousness the participant held for developing TC, including the medical and possible social consequences.

Statistical analysis of the seven items in this sub-scale revealed that 11% of the participants indicated they strongly disagreed that TC was a serious illness, 30% disagreed, and 29% were neutral. Twenty-eight percent agreed that TC was serious and eight percent strongly agreed that it was a serious illness. The sub-scale mean was 2.82 and the grouped standard deviation was 0.96 (see Tables 5 and 6).

**Table 5.**

**Percent of Responses to Seriousness Questions (N=100)**

Likert Scale Value	1	2	3	4	5
Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The thought of testicular cancer scares me.	8	12	17	42	21
When I think about testicular cancer, my heart beat faster.	12	33	36	19	0
I am afraid to think about testicular cancer.	16	40	30	14	0
Problems I would experience with testicular cancer would last a long time.	4	10	34	44	8
Testicular cancer would threaten a relationship with my girlfriend, wife, or partner.	22	39	22	13	4
If I had testicular cancer my whole life would change.	5	27	26	38	4
If I developed testicular cancer, I would not live longer than five years.	13	49	37	0	1

**Table 6.**  
**Responses to Seriousness Questions (N=100)**

<u>Item</u>	<u>Mean</u>	<u>Standard Deviation</u>
The thought of testicular cancer scares me.	3.56	1.18
When I think about testicular cancer, my heart beat faster.	2.62	.93
I am afraid to think about testicular cancer.	2.42	.92
Problems I would experience with testicular cancer would last a long time.	3.42	.92
Testicular cancer would threaten a relationship with my girlfriend, wife, or partner.	2.38	1.08
If I had testicular cancer my whole life would change.	3.09	1.00
If I developed testicular cancer, I would not live longer than five years.	2.27	.72

#### Research Question Five

To what extent do active duty Air Force males believe the practice of TSE to be beneficial?

#### Items Eighteen through Twenty-one

Items 18 through 21 inquired as to the positive attributes of practicing TSE.

Statistical analysis of the four items in this sub-scale indicated that two percent of the



participants were in strong disagreement that TSE was of any benefit, three percent disagreed, and 31% gave neutral responses. Fifty-one percent agreed that there were positive attributes to the practice of TSE, and 13% were in strong agreement that TSE was of some benefit. The sub scale mean 3.7 and the standard deviation was .76 (see Tables 7 and 8).

**Table 7.**

**Percentage of Responses to Benefit Questions (N-100)**

Likert Scale Value	1	2	3	4	5
Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
When I do testicular self-examination I feel good about performing self care.	1	1	66	26	4
If I complete testicular self-examination monthly during the next year I will decrease my chance of dying from testicular cancer.	4	3	26	52	15
If I complete testicular self-examination monthly I will decrease my chances of requiring radical surgery if testicular cancer occurs.	2	5	25	54	14

Table 7. continued

Likert Scale Value	1	2	3	4	5
	Strongly	Disagree	Neutral	Agree	Strongly
Item	Disagree				Agree
If I complete monthly testicular self-examination it will help me find a lump which might be cancer before it is detected by a health care provider.	1	8	70	20	1

**Table 8.**

**Responses to Benefit Questions**

Item	Mean	Standard Deviation	<u>n</u>
When I do testicular self-examination I feel good about performing self care.	3.31	.62	98
If I complete testicular self-examination monthly during the next year I will decrease my chance of dying from testicular cancer.	3.71	.90	100
If I complete testicular self-examination monthly I will decrease my chances of requiring radical surgery if testicular cancer occurs.	3.73	.84	100
If I complete monthly testicular self-examination it will help me find a lump which might be cancer before it is detected by a health care provider.	4.07	.64	100

### Research Question Six

To what extent do active duty Air Force males perceive there to be barriers to the practice of TSE?

#### Items Twenty-two through Twenty-seven

Items 22 through 27 inquired as to the perceived negative aspects related to the practice of TSE. Statistical analysis of the seven items in this sub-scale indicated that 25% of the participants strongly disagreed that there were negative aspects assigned to the practice of TSE, 54% disagreed, and 17% gave neutral responses. Four percent agreed that there were negative aspects to the practice of TSE, and less than one percent were in strong agreement that there were barriers to the practice of TSE. The sub-scale mean was 2.0 and standard deviation was .75 (see Tables 9 and 10).

**Table 9.**

**Percentage of Responses to Barrier Questions (N=100)**

Likert Scale Value Item	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
I feel funny doing testicular self-examination.	18	42	28	11	1
Doing testicular self examination during the next year will make me worry about testicular cancer.	16	56	21	7	0
Testicular self-examination will be embarrassing to me.	23	61	13	3	0
Doing testicular self-examination will take too much time.	33	57	9	1	0
Doing testicular self-examination will be unpleasant.	21	55	23	1	0
I don't have enough privacy to do testicular self examination.	41	50	5	2	1

**Table 10.**

**Responses to Barrier Questions**

Item	Mean	Standard Deviation	<u>n</u>
I feel funny doing testicular self-examination.	2.35	.94	100
Doing testicular self examination during the next year will make me worry about testicular cancer.	2.19	.79	100
Testicular self-examination will be embarrassing to me.	1.96	.70	100
Doing testicular self-examination will take too much time.	1.78	.64	100
Doing testicular self-examination will be unpleasant.	2.04	.70	100
I don't have enough privacy to do testicular self examination.	1.70	.75	99

### Research Question Seven

To what extent do active duty Air Force males believe themselves to be confident in the practice of TSE?”

#### Items Twenty-eight through thirty-three

Items 28 through 33 inquired into the perceived procedural competence the participants held in the practice of TSE. Statistical analysis of the six items in this sub-scale indicated that nine percent of participants strongly disagreed, 19% disagreed, and 28% gave a neutral response. Thirty-seven percent agreed they felt confident in the procedural practice of TSE, and six percent strongly agreed. The sub-scale mean was 2.0 and the standard deviation was .9 (see Tables 11 and 12).

**Table 11.**

**Percentage of Responses to Confidence Questions (N=100)**

Likert Scale Value	1	2	3	4	5
Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I know how to perform testicular self-examination.	24	24	9	33	8
I am confident I can perform testicular self-examination correctly.	8	17	15	47	12
If I were to develop testicular cancer I would be able to find a lump by performing testicular self-examination.	2	11	37	44	5
I am able to find a testicular lump if I practice testicular self-examination alone.	1	15	31	44	8
I am able to identify normal and abnormal testicular tissue when I do testicular self-examination.	5	5	47	29	2
When I look in the mirror, I can recognize abnormal changes in my testicles.	11	34	27	23	4



**Table 12.**

**Responses to Confidence Questions**

Item	Mean	Standard Deviation	<u>n</u>
I know how to perform testicular self-examination.	2.76	1.36	98
I am confident I can perform testicular self-examination correctly.	3.38	1.15	99
If I were to develop testicular cancer I would be able to find a lump by performing testicular self-examination.	3.39	.83	99
I am able to find a testicular lump if I practice testicular self-examination alone.	3.43	.88	99
I am able to identify normal and abnormal testicular tissue when I do testicular self-examination.	3.14	1.16	98
When I look in the mirror, I can recognize abnormal changes in my testicles.	2.74	1.06	99

**Comments**

A research question did not address one item in the survey. Item four asked, “How did you learn to perform a testicular self-examination?” Fifty-nine percent indicated that they had not learned how to perform TSE. Twenty-two percent indicated they had learned how to perform TSE from a physician, one percent from a physician’s assistant, eight percent from a pamphlet, five percent from a magazine, two percent from

a television program, and three percent indicated they learned how to perform TSE from an ‘other’ source.

Findings not related to the research questions were serendipitously discovered during the analysis of the data. The majority of women in Champion’s 1992 study of breast cancer screening behaviors indicated they believed there to be few barriers to the performance of BSE and indicated they practiced BSE more often than women who perceived there to be significant barriers to its performance. In contrast, the men in this study also believed there to be few barriers to the performance of TSE, however this did not result in an increased practice of TSE. Women in Champion’s study and men in this investigation equally indicated they would benefit from the practice of BSE and TSE respectively. Women in Champion’s study expressed greater confidence in the technical performance of BSE than did the men in this study regarding the practice of TSE.

Several participants took the opportunity to discuss the subjects of TC and TSE with the investigator after completing the questionnaire. Some comments have not been included in this discussion because the investigator believed they were well addressed in the questionnaire. The participants offered both positive and negative comments about their own personal knowledge base about the illness and the health behavior itself. Seven individuals offered that they had never even heard of testicular cancer. Nine men verbalized their disappointment that a military health care provider had never addressed the subject during a physical examination. Nine men expressed a desire to learn how to perform TSE.

### Summary

This chapter detailed the data collected in an attempt to describe the beliefs and practices of an active duty Air force male population related to TC and TSE.

Demographics, the practice of TSE, susceptibility, seriousness, benefits, barriers, and confidence were analyzed.

## CHAPTER V: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

### Introduction

Testicular Cancer continues to be on the rise and increasing numbers are being diagnosed within the Department of Defense each year. There has been a paucity of data collected within the United States military male population assessing their knowledge base of testicular cancer and the practice of testicular self-examination. The American Cancer Society currently recommends that a health care provider examine a man's testicles every three years and a significant number of research studies and opinions advocate the practice of TSE. With over 100,000 active duty Air Force males and with at least as many male family members, the importance of informing this population of the benefits of health care and maintenance practices is essential in order to assure a healthy active force and healthy Air Force family members.

The purpose of this research was to examine the beliefs of active duty Air Force males related to TC and TSE and to determine if men are instructed in TSE, if they perform it, and determine if there are any perceived barriers to its performance. This chapter discusses the investigator's research findings and relates these findings to previously performed research. Recommendations for future research are also discussed.

### Response Rate

The questionnaires for this survey had a rate of return of 93%. This is a significantly better than average response rate for a questionnaire. Burns and Grove (1997) wrote that with a response rate of less than 50%, a sample can not reflect a true representation of the population under scrutiny. The excellent response rate of this study can most likely be attributed to the fact that the potential participants were briefed by the

investigator prior to the distribution of the questionnaire. Most individuals also had approximately fifteen minutes of total waiting time between vision, hearing and vital signs screening thereby offering the participant time to complete the questionnaire while being reasonably unencumbered. Completed questionnaires were inserted into an envelope by the participant and placed in a designated box located out of the direct view of the investigator which may have given the individual a greater sense of anonymity. The mere presence of the investigator may have made the participants feel obliged to fill out the questionnaire even though it had been made clear in the cover letter and in the briefing that participation was completely voluntary.

### Demographics

The age of the participants ranged from 20 to 52 years, with a mean age of 31. Seventy one percent of the sample fell within the 15 to 35 year age range viewed to be at highest risk for testicular cancer. Sixty seven percent identified themselves as Caucasian, 20% as African American, seven percent as Hispanic, two percent as Asian, one percent as Native American and three percent as 'other'. This ethnic breakdown of study participants shares similarities to that of the general Air Force population.

All participants specified their grade. Sixty eight percent identified themselves as enlisted and 32% identified as officers. The grade most frequently cited was that of E-5, which is a mid-level enlisted rank. This grade comprised 20% of the sample. These percentages approximate that of the general Air Force population.

## Conclusions

### Research Question One

Are active duty Air Force males practicing TSE?

Sixty seven percent of study participants never practice TSE. Twenty five percent of the participants indicated they practice TSE every one to six months and eight percent performed TSE once a year. The study did reveal that 41% of the participants had received some information regarding the practice of TSE. The majority of the individuals who had knowledge of TSE received that information from a source other than a health care provider. A study conducted within the Israeli army indicated that 79% of 717 soldiers had no apparent knowledge of TSE, 16% had received instruction on how to perform it and only two percent practiced it regularly (Singer, et al, 1993).

### Research Question Two

Is there a relationship between age, ethnicity or grade and the practice of TSE?

All participants (n = 2) in the age range of 50-59 years indicated they performed TSE at least once a year. Due to the small number of participants in this age group however a generalized statement citing that all active duty Air force males between the ages of 50 and 59 practice TSE cannot be made. Seventy-seven percent of participants in the age range of 30-39 indicated that had practiced TSE at least one time during a year, in comparison to the 20-29 year olds, 58% of whom have engaged in the practice of this health behavior.

The Hispanic population of this sample had the highest practice of self-examination at 58%. The African American and Caucasian populations equally engaged

in the practice of TSE at the rate of 30%. The sample participants in the Asian population did not practice TSE.

### Research Question Three

To what extent do active duty Air Force males perceive themselves to be susceptible to TC?

Sixty Five percent of the participants did not believe themselves to be susceptible to developing TC and 33% gave a neutral response. This study revealed that only two percent of men believed TC to be personally relevant whereas Katz et al. (1995) found 10% of women believed themselves to be moderate to highly vulnerable to breast cancer.

### Research Question Four

To what extent do active duty Air Force males believe TC to be a serious illness?

The participants appeared split on the subject of seriousness. Forty one percent of the men who participated in the study believed that TC would not be of significant medical or social consequence and 36% of men did believe there would be significant consequence to the development of this disease. Forty three percent agreed to some extent that TC was indeed a frightening illness with more than half believing that the sequela to the disease would last an extended period of time. The overwhelming majority however did not assign a high mortality to illness and only 17% believed this cancer would threaten an intimate relationship.

### Research Question Five

To what extent do active duty Air Force males believe the practice of TSE to be beneficial?

Sixty four percent of the sample agreed that there were positive attributes to practicing TSE with 90% believing that monthly TSE would help discover a possible cancer before it might be detected by a health care provider. This sample placed a higher benefit to self-examination than did those individuals in the study conducted by Katz and colleagues (1995), revealing that only 62% believed that TSE was of some importance. This same study indicated that 99% of women believed breast self-examination was important. It can be argued that women place a higher importance on performing breast self-examination than men do on self examination because breast cancer is a more common and notorious disease.

### Research Question Six

To what extent do active duty Air Force males perceive there to be barriers to the practice of TSE?

Less than five percent of participants assigned any negative aspects to the practice of TSE. Barriers were shown to have the least impact on the practice of TSE in comparison to other considerations which may influence practice. The lack of perceived barriers in this study does not appear to be predictive of increased performance of health care behavior.



### Research Question Seven

To what extent do active duty Air Force males believe themselves to be confident in the practice of TSE?

Twenty-eight percent of participants lacked confidence in their ability to correctly perform self-examination with a like number offering a neutral response. Slightly over 50% of participants who practiced TSE indicated they were confident in performing it.

The Health Belief Model was used to assess the beliefs of men related to TC and TSE. In this study participants did indicate that there were high perceived benefits and low perceived barriers to the practice of TSE. These beliefs however did not contribute to an increased frequency in the practice of TSE. In contrast, studies by Hallal (1982) and Rutledge (1987) revealed that high perceived benefits and low perceived barriers did contribute to an increased frequency of practice of breast self-examination among women.

### Recommendations

This study has implications for health care providers and nurse practitioners in particular. One of the primary goals of the nurse practitioner is health promotion and disease prevention. Research into the teaching of TSE and other health care behaviors by nurse practitioners and the subsequent practice of these behaviors by patients is of worthy pursuit. Further research into incidence of testicular cancer and the method by which it was discovered will help determine if the recommendation for monthly TSE should be put forth with the same zeal as monthly breast self-examination has for women.

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## APPENDICES

Appendix A: Questionnaire Cover Letter

Appendix B: Beliefs and Practices related to Testicular Cancer and Testicular Self-examination Questionnaire

Appendix C: Content Validity Assessment Tool

Appendix D: Permission for Tool Adaptation

Appendix E: IRB Approval: Uniformed Services University of the Health Sciences

Appendix F: IRB Approval: Malcolm Grow Medical Center, 89<sup>th</sup> Medical Group

## APPENDIX A: COVER LETTER

## Research Study

### Beliefs and Practices related to Testicular Cancer and Testicular Self-examination

#### Introduction

You are being asked to participate in a research study. Before you decide to be a participant, you will need to read this cover letter. You should understand the risks and benefits so you may make an informed decision. Your participation in this study is completely voluntary. Your completion of the questionnaire provided will signify your consent to participate in this study.

#### Description of the Study

The Department of the Graduate School of Nursing of the Uniformed Services University of the Health Sciences and Major Roberta J. Barnes are conducting a survey to explore the beliefs and practices of active duty Air Force men related to testicular cancer and testicular self-examination. Approximately 100 men will complete a questionnaire regarding their own beliefs and practices.

#### Possible Benefits and Risks

You as a participant will not receive any monetary compensation. You will however be provided a copy of the study results upon your written request. You may not on a personal level benefit from this study. Your participation however may contribute to a better understanding of health care knowledge and practices within the Air Force. No physical or emotional risks are anticipated.

#### Privacy and Confidentiality

Your name is not requested on the questionnaire to protect your anonymity. There will not be any method of coding utilized to identify the participants in the study.

Confidentiality will be protected to the fullest extent. The results of this study will be submitted as a thesis. The individual conducting the research (Major Roberta Barnes) will answer any questions you have about this study.

#### Right to Withdraw from the Study

You may decide to stop your participation at any time. There will not be any financial or job related repercussions should you decide to withdraw.



## APPENDIX B: QUESTIONNAIRE

## Questionnaire

### Beliefs and Practices related to Testicular Cancer and Testicular Self-examination Questionnaire

The following questionnaire contains 33 questions. It will take you approximately 8 minutes to complete. Please read each question carefully and provide your best response for each question. Thank you for taking the time to complete this questionnaire. Your participation is greatly appreciated.

Please write your response in the blank provided for the next question.

1. What is your current age in years?

Please circle the best response for each of the following questions. Please circle only one response for each question.

2. What is your current military grade?

- 2.1 E-1            2.9 O-1
- 2.2 E-2            2.10 O-2
- 2.3 E-3            2.11 O-3
- 2.4 E-4            2.12 O-4
- 2.5 E-5            2.14 O-5
- 2.6 E-6            2.15 O-6
- 2.7 E-7
- 2.8 E-8

3. What is your race or identified ethnic group?

- 3.1 African American
- 3.2 Asian
- 3.3 Caucasian
- 3.4 Hispanic
- 3.5 Native American
- 3.6 Pacific Islander
- 3.7 Other

4. How did you learn to perform a testicular self-examination?

- 4.1 I have not learned how to perform testicular-self-examination
- 4.2 from a physician
- 4.3 from a physician's assistant (PA)
- 4.4 from a nurse practitioner (NP)
- 4.5 from a pamphlet
- 4.6 from a magazine
- 4.7 from a television program
- 4.8 other

To answer question #5, please write a number in the appropriate blank or circle never.

5. How frequently do you practice testicular self-examination?

5.1 never

5.2 every month\_\_\_\_(s)

5.3 every year\_\_\_\_(s)

Instructions for answering the following questions.

Please circle the response that best answers each question. Please circle only one response for each question. Please answer all questions.

6. It is extremely likely I will get testicular cancer in the future.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

7. I feel I will get testicular cancer in the future.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

8. There is a good possibility I will get testicular cancer in the next 10 years.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

9. My chances of getting testicular cancer are great.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

10. I am more likely than the average man to get testicular cancer.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

11. The thought of testicular cancer scares me.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

12. When I think about testicular cancer, my heart beats faster.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

13. I am afraid to think about testicular cancer.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

14. Problems I would experience with testicular cancer would last a long time.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

15. Testicular cancer would threaten a relationship with my girlfriend, wife, or partner.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

16. If I had testicular cancer my whole life would change.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

17. If I developed testicular cancer, I would not live longer than 5 years.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

18. When I do testicular self-examination I feel good about performing self care.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

19. If I complete testicular self-examination monthly during the next year I will decrease my chance of dying from testicular cancer.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

20. If I complete testicular self-examination monthly I will decrease my chances of requiring radical surgery if testicular cancer occurs.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

21. If I complete monthly testicular self-examination it will help me find a lump which might be cancer before it is detected by a health care provider.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

22. I feel funny doing testicular self-examination.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

23. Doing testicular self-examination during the next year will make me worry about testicular cancer.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

24. Testicular self-examination will be embarrassing to me.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

25. Doing testicular self-examination will take too much time.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

26. Doing testicular self-examination will be unpleasant.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

27. I do not have enough privacy to do testicular self-examination.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

28. I know how to perform testicular self-examination.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

29. I am confident I can perform testicular self-examination correctly.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

30. If I were to develop testicular cancer I would be able to find a lump by performing testicular self-examination.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

31. I am able to find a testicular lump if I practice testicular self-examination alone.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

32. I am able to identify normal and abnormal testicular tissue when I do testicular self-examination.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

33. When looking in the mirror, I can recognize abnormal changes in my testicles.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

Thank you for completing this questionnaire. Your participation in this research on beliefs and practices related to testicular cancer and testicular self-examination is greatly appreciated. Please turn in the questionnaire as instructed.

END

## APPENDIX C: CONTENT VAILIDITY ASSESSMENT TOOL

## Content Validity Assessment Tool

### A Survey of Beliefs and Practices of Active Duty Air Force Males Related to Testicular Cancer and Testicular Self-examination

#### TESTICULAR CANCER AND SELF-EXAMINATION SURVEY CLIENT ASSESSMENT - ESTABLISHING CONTENT VALIDITY

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Clinical Specialty:

\_\_\_\_\_

Content Expert:

Thank you for agreeing to evaluate the attached questionnaire that is designed to assess beliefs and practices related to testicular cancer and testicular self-examination.

Using the rating scale that follows, please evaluate each item for relevancy (to the content area under study) by placing the number (#) of your rating in the space provided. Thank you.

Rating Scale:

1 = Not Relevant

2 = Somewhat Relevant

3 = Relevant

4 = Very Relevant

- |           |           |           |
|-----------|-----------|-----------|
| 1. _____  | 16. _____ | 31. _____ |
| 2. _____  | 17. _____ | 32. _____ |
| 3. _____  | 18. _____ | 33. _____ |
| 4. _____  | 19. _____ |           |
| 5. _____  | 20. _____ |           |
| 6. _____  | 21. _____ |           |
| 7. _____  | 22. _____ |           |
| 8. _____  | 23. _____ |           |
| 9. _____  | 24. _____ |           |
| 10. _____ | 25. _____ |           |
| 11. _____ | 26. _____ |           |
| 12. _____ | 27. _____ |           |
| 13. _____ | 28. _____ |           |
| 14. _____ | 29. _____ |           |
| 15. _____ | 30. _____ |           |

APPENDIX D: PERMISSION TO USE AND ADAPT BREAST CANCER  
SCREENING TOOL





April 13, 1999

SCHOOL OF NURSING

Roberta J. Barnes  
7508 Nutwood Court  
Rockville, MD 20855

Dear Ms. Barnes:

Enclosed is a copy of my Health Belief Model and other related materials.  
You have my permission to adapt the Health Belief Model for use with  
testicular self-examination. However, I require that you send me a copy of the  
completed results. Please call me if you require further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Victoria Champion".

Victoria L. Champion, DNS, RN, FAAN  
Professor and Associate Dean for Research  
Mary Margaret Walther Professor of Nursing

Email address: [vchampion@iupui.edu](mailto:vchampion@iupui.edu)

Wpdocs\HBMrequest.doc

CENTER FOR NURSING RESEARCH

1111 Middle Drive  
Indianapolis, Indiana  
46202-5107

317-274-7627  
Fax: 317-278-2021

located on the campus of  
Indiana University  
Purdue University  
Indianapolis

APPENDIX E: UNIFORMED SERVICES UNIVERSITY IRB APPROVAL



UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES  
F. EDWARD HEBERT SCHOOL OF MEDICINE  
4301 JONES BRIDGE ROAD  
BETHESDA, MARYLAND 20814-4799



July 29, 1999

MEMORANDUM FOR ROBERTA J. BARNES, RN, BSN, GRADUATE SCHOOL OF  
NURSING

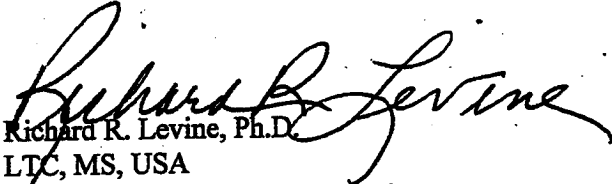
SUBJECT: IRB Approval of Protocol TO61AT-01 for Human Subject Use

Your research protocol entitled "*Beliefs and Practices of Active Duty Air Force Males Related to Testicular Cancer and Testicular Self-Examination*," was reviewed and approved for execution on 7/29/99 as an **exempt** human subject use study under the provisions of 32 CFR 219.101 (b)(2). This approval will be reported to the full IRB scheduled to meet on 12 August 1999.

The purpose of this study is to examine the beliefs of active duty Air Force males related to testicular cancer and testicular self-examination and to determine if men are instructed in testicular self-examination, if they perform it, and if there are any perceived barriers to performing this self-care practice. This study involves a convenience sample of 200 men at Andrews Air Force Base. Data will be collected using an anonymous 33-item questionnaire. The IRB understands that questionnaires will not contain any form of coding that would enable subject identification and that all study results will be reported in the aggregate.

*Please note that the informed consent document to be used for this study should be prepared on USUHS letterhead. Photocopies of the informed consent document may be used for distribution to subjects while the original form should be maintained in your files. Additionally, if there are any changes to the questionnaire as a result of your pilot study, a copy of the revised questionnaire should be submitted to this office for your file. And, finally, a copy of the Air Force approval letter as well as the Andrews Air Force Base approval letter should be forwarded to this office as well for your file.*

Please notify this office of any amendments you wish to propose and of any untoward incidents which may occur in the conduct of this project. If you have any questions regarding human volunteers, please call me at 301-295-3303.

  
Richard R. Levine, Ph.D.  
LTC, MS, USA  
Director, Research Programs and  
Executive Secretary, IRB

Cc: Director, Grants Administration



APPENDIX F: 89<sup>TH</sup> MEDICAL GROUP IRB APPROVAL



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 89TH AIRLIFT WING (AMC)**

1 Dec 99

**MEMORANDUM FOR MAJOR BARNES**

**FROM:** 89 MDG/SGH  
1050 West Perimeter Road  
Andrews AFB MD 20762-6600

**SUBJECT:** Proposed Clinical Investigation Research Protocol – Human Exempt

1. Your protocol entitled "Beliefs and practices of active duty air force males related to testicular self examination" was reviewed and unanimously approved by the 89th Medical Group Investigational Review Board (IRB) on Nov 10, 1999.
2. Your research study has been assigned the number FMG1999019E. You may begin the study upon receipt of this letter. Please remember that any subject's personal identification needs to be coded during the data collection in order to protect their privacy and any indirect linkage must be destroyed after data collection is complete.
3. All adverse reactions must be reported to the IRB.
4. This approval is only for the study to be conducted at MGMC. If this study is to be conducted at other sites, this would require a separate approval by the IRB at that site.
5. Please direct all question to TSgt Thule Huff, Reserve Affairs Liaison; 89 MDG/SGATR; 1050 West Perimeter Road, Andrews AFB MD 20762-6600 or Fax 240-857-4093 or e-mail [huffth@mgmc.af.mil](mailto:huffth@mgmc.af.mil) or Lt Col Janice M. Rusnak (IRB Chairperson) at 240-857-8831.
6. We wish you the best in your research efforts. Thank you for your cooperation with the above IRB regulations and for participation in research at the 89th Medical Group.

A handwritten signature in black ink, appearing to read "R. A. Robinson", is positioned above the typed name.

RUTH A. ROBINSON, Col, USAF, MC  
Chief of the Medical Staff, 89th Medical Group